Get your 3.7HW, 3.8HW, and 6 polynomial division problems ready to be checked. Work on your Polynomial Extra WKS from last time, we will go over a couple of questions soon.

Mar 28-10:17 AM

Poly Extra Wks

(17) $x^4 - 3x^3 - x^2 + 3x = 0$

$x(x^3 - 3x^2 - x + 3) = 0$

$x(x+1)(x^2 - 4x + 3)$

$x(x+1)(x-3)(x-1)$

$p: 3 \to 3, 1$

$q: 1 \to 1$

$\frac{p}{q}: \pm\{3, 1\}$

$$x+1 \overline{)\, x^3 - 3x^2 - x + 3}$$

$x^2 - 4x + 3$

$-(x^3 + x^2)$

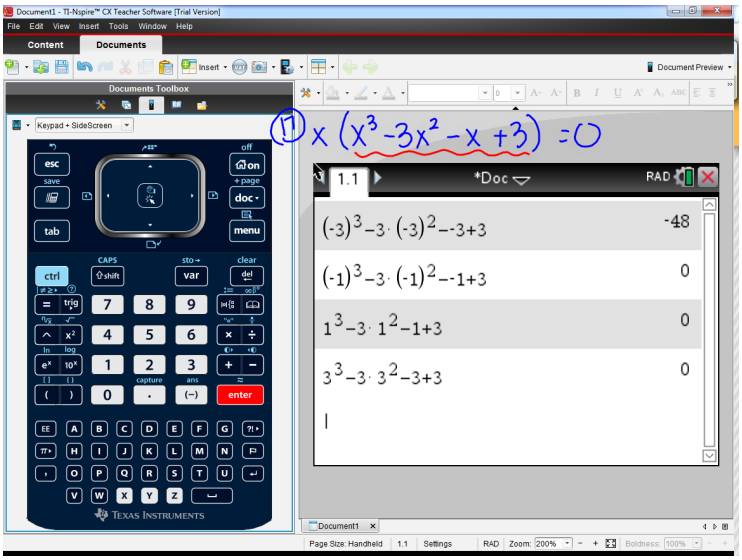
$-4x^2 - x$

$-(-4x^2 - 4x)$

$3x + 3$

$-(3x + 3)$

0



Rational Root Theorem:

$$a_n x^n + a_{n-1} x^{n-1} + \cdots + a_0 = 0$$

-Possible rational roots are p/q, where p is an integer factor of the constant term (a_0) and q is an integer factor of the leading coefficient (a_n).

Practice.

State the possible rational zeros for each function. Then find all rational zeros.

$f(x) = 9x^3 - 6x^2 + 34x - 11$

$f(x) = 2x^3 - x^2 - 2x + 1$

$f(x) = x^3 - 5x^2 - 15x + 27$

$f(x) = 2x^3 - 5x^2 + 4x - 1$

Nov 9-2:11 PM

Binomial Theorem

According to the theorem, it is possible to expand any power of $x + y$ into a sum of the form

$$(x+y)^n = \binom{n}{0}x^n y^0 + \binom{n}{1}x^{n-1}y^1 + \binom{n}{2}x^{n-2}y^2 + \cdots + \binom{n}{n-1}x^1 y^{n-1} + \binom{n}{n}x^0 y^n,$$

where each $\binom{n}{k}$ is a specific positive integer known as a binomial coefficient.

We determine each binomial coefficient by using Pascal's triangle.

15) 3rd term: $(x+7)^4 = 1x^4y^0 + 4x^3y^1 + 6x^2y^2 + 4x^1y^3$

$n=4$, $x=x$, $y=7$

$6x^2y^2$

$6(x)^2(7)^2$

$6x^2 \cdot 49$

$294x^2$

16) $(2+y)^3$ $n=3$, $x=2$, $y=y$

2nd term

$3(2)^2y^1$

$12y$

Pascal's triangle:

			1				n=0
		1		1			n=1
	1		2		1		n=2
1		3		3		1	n=3
1	4		6		4	1	n=4
1		5		10		5	1
1	6		15		20		15	6	1
1		7		21		35		35		21		7		1

$+1x^0y^4$

$1x^3y^0 + 3x^2y^1 + 3x^1y^2 + 1x^0y^3$

1) 3rd term in expansion of $(m-n^2)^4$

2) 5th term in expansion of $(3+y)^4$

3) 3rd term in expansion of $(y+4)^4$

4) 3rd term in expansion of $(2x^2+1)^4$

Nov 14-9:29 AM

Classwork/Homework

Module 3 Study Guide

Nov 15-2:25 PM